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## **HURRICANES IRMA AND MARIA MANAGEMENT REPORT**

*Information contained in this report reflects HQ and regional reporting from the most recently completed operational period as well as other reports provided by HQ, regional and interagency sources.*

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### **National Incident Management Objectives**

Objective 1: Ensure that health and safety of the EPA responders is considered at all times.

Objective 2: Establish an incident management structure and processes employing the Incident Command System to enable effective overall management of the event with deployment of resources (staff and equipment) in a rapid, aggressive and well-coordinated manner.

Objective 3: Ensure prompt review and processing of fuel waiver requests.

Objective 4: Prepare for and provide rapid assessment of industrial facilities as requested by the State or under EPA's statutory program responsibilities for CERCLA Superfund, RMP and FRP facilities. Working with our state partners, contact industrial sources within the impacted area to determine their operational status and determine what support can be provided with the monitoring of the start-up of industrial sources.

Objective 5: Prepare for and provide rapid assessment of & technical assistance to drinking water & wastewater facilities, as requested by the State or local government. EPA will support our state partners in contacting drinking water and wastewater systems.

Objective 6: Prepare a Sustained Response Plan that outlines the resource and equipment needs for a long duration response.

Objective 7: Activate the Agency's Crisis Communication Plan to ensure effective and efficient coordination of all incident communications.

Objective 8: Encourage a collaborative federalism approach, where national, state and local governments interact cooperatively and collectively to solve common problems.

Objective 9: Begin Agency internal and external coordination under the National Disaster Recovery Framework regarding Recovery Support Functions in which EPA is likely to be involved.

## Executive Summary

### Region 2

- On November 18<sup>th</sup> and 19<sup>th</sup>, Congressional Appropriations Staff visited the Puerto Rico Joint Field Office (JFO). They met staff of the various Emergency Support Functions (ESFs), including ESF #10. The purpose of the ESF interaction was just to meet the responders.
- Power remains out for about 70-75% of the residents of Puerto Rico (PR) and The U.S. Virgin Islands (USVI). USVI anticipates restoration of power to 90% of clients by the end of December 2017. PR Governor Rossello has set a goal for end of December for PR as well, but the United States Army Corps of Engineers (USACE) doubts this schedule can be met. USACE considers 75% restoration by late January a more likely timeframe.
- The Puerto Rico Electric Power Authority (PREPA) reports that 51.1% of its facilities are without power generation capacity in PR.
- In PR, about 9.4% of the population is still not receiving drinking water through the utility system. Comparable data for the USVI is not available, but the population is reportedly being provided with adequate supplies of drinking water.
- In PR, 4% of the sewage treatment plants are still not operational. Numerous raw sewage discharges entered waterways upstream of drinking water intakes. EPA, the Centers for Disease Control (CDC), and PR Department of Health (DOH) advised residents not to bathe in surface waters.
- EPA's debris mission is progressing: many staging areas are now operational and more are being identified and opened. Many thousands of household hazardous waste (HHW) items, orphan containers, and white goods have already been collected. In the USVI, large quantities of medical waste are being managed. Information about HHW segregation, drop-off and/or collection is being disseminated to residents through flyers, public service radio announcements, and direct interaction by EPA personnel at heavily frequented locations such as shopping centers.
- USACE reports that vegetative debris burn operations on Saint Croix (STX) are likely to start on December 9<sup>th</sup> and on Saint Thomas (STT) on December 12<sup>th</sup>. PR's Environmental Quality Board (PR EQB) is considering a pilot program for the use of an air burner for vegetative debris disposal.
- EPA continues to coordinate with the Federal Emergency Management Agency (FEMA), USACE, the United States Coast Guard (USCG), the Commonwealth of PR, and other partners on field operations, assessment of fixed facilities, debris management, drinking water infrastructure, and data management.

*[Region 4 reports only on Tuesdays. This information is current as of November 21<sup>st</sup>]*

### Region 4

- To date, EPA Region 4 has recovered 109 vessels in the Marathon Key area and transported them to Florida Fish and Wildlife Commission (FWC) staging areas. EPA estimates that 39 vessels remain to be addressed within EPA's area of responsibility (AOR). Currently, EPA vessel recovery operations are limited to private canals in Sector Key West. Operations in the remainder of the State are USCG-lead.
- Landfill Technical Specialists from the Resource Conservation and Restoration Division completed their mission, performing a total of 551 site visits and assessments at 74 identified Disaster Debris Management Sites (DDMSs) between Key West and Key Largo.

### Active Regional Mission Assignments (MAs) and Funding

EPA Region	Mission Assignment Number	Funding Amount	Description of Assignment
Region 2	4339DR-PR-EPA-04	\$6,000,000	To deploy personnel to coordinate and execute all necessary assessments, evaluations, sampling and analysis services/support and other necessary actions associated with ensuring the safety and quality of DW and WW systems, in support of PRASA, Puerto Rico Department of Health (PRDOH).
	4335DR-VI-EPA-02	\$1,008,000	To perform assessment of oil and hazardous materials releases, contaminated debris and other environmental events in USVI.
	4335DR-VI-EPA-04	\$10,000,000	Conduct oil and hazardous materials field operations, including cleanup and disposal of hazardous materials and oil,

EPA Region	Mission Assignment Number	Funding Amount	Description of Assignment
			and response to orphaned containers in order to mitigate actual and potential threats to public health and safety.
	4339DR-PR-EPA-01	\$303,000	EPA to FEMA NRCC or PR JFO/EOC EPA requested additional funding for MA 4339DR-PR-EPA-01.
	4339DR-PR-EPA-03	\$23,000,000	Removal, cleanup and disposal of oil and hazmat; collect and dispose of HHW; monitor immediate threats to public H&S and the environment in PR
	4339DR-PR-EPA-06	\$15,000	Conduct drinking water sampling at sites throughout PR that provide potable drinking water for resident employees per the DOI's request
	4340DR-VI-EPA-01	\$255,000	EPA to FEMA NRCC or USVI JFO/EOC
	4340DR-VI-EPA-04	\$5,300,000	EPA to RRCC, JFO, EPA REOC, State EOC and other coordination venues to support FEMA response operations in the USVI.
	4340DR-VI_EPA-05	\$8,000,000	Removal, cleanup and disposal of oil & hazmat; collect and dispose of HHW; monitor immediate threats to public health, safety, and the environment in the VI
Region 4	4337DR-FL-EPA-08	\$10,000,000	Provide oil and hazardous material field response in support of FEMA response operations providing specialized expertise, conducting damage assessment of oil/hazmat waste impact evaluating hazards; and/or response, removal, or disposal of actual and potential oil discharges, and releases of hazardous substances, pollutants and contaminants and remove pollutants from vessels in or upon navigable waters and adjoining shorelines through November 30 <sup>th</sup> with a state cost share of 10%.
	4337DR-FL-EPA-09	\$675,000	Provide funding for EPA Landfill Specialty Teams through November 30 <sup>th</sup> with a state cost share of 10%.
<b>Total Active MAs</b>	<b>\$64,691,000</b>		

**Total Number of Regional Personnel Involved in Response (as reported on by Region 2 on November 21<sup>st</sup> and Region 4 on November 21<sup>st</sup>)**

Type	R2 Personnel	R4 Personnel	Total Regional Personnel
EPA*	177	23	200
Contractors	160	55	215
<b>Totals</b>	<b>337</b>	<b>78</b>	<b>415</b>

*\*These numbers include Region 2 CEPD personnel*

**Force Laydown for USVI and PR (as reported by Region 2 on November 21<sup>st</sup>)**

Type	USVI Personnel	PR Personnel	Total Deployed
EPA*	26	77	103
Contractors	71	67	138
<b>Totals</b>	<b>97</b>	<b>144</b>	<b>241</b>

*\*These numbers include Region 2 CEPD personnel*

## **Region 2 Significant Activities**

- The USCG mobilized a hopper barge and crane barge that was scheduled to arrive on November 20<sup>th</sup>. USCG planned to use the barges to transfer/segregate dark/gray water, petroleum based products, HHW, white goods, and e-goods during initial removal operations with their Oil Spill Response Organization (OSRO) until space became an issue. EPA will coordinate with USCG's operations and schedule our ERRS contractor to retrieve the wastes from the barges as needed.
- FEMA transported additional EPA contractor (ERRS) equipment by barge to PR on November 13<sup>th</sup> to support the oil and hazmat MA.
- EPA will assist the removal of approximately 400 gallons of waste oil from the marina in USVI. Removal will occur when a vacuum truck is available.
- EPA continues to coordinate with Puerto Rico Department of Health (PRDOH), PR EQB, and the Puerto Rico Aqueduct and Sewer Authority (PRASA) regarding analytical laboratory services. A FEMA MA is in place to assist with funding the PR EQB and PRDOH labs with needed repairs, supplies, equipment, and personnel to come back into service. An OSC is assigned to this project and coordinating directly with the laboratories.
  - EPA met with PR EQB personnel at the laboratory located in Monacillos, PR to conduct a needs assessment for returning the laboratory to operational capacity. The FEMA Resource Request Form draft includes provisions for a generator, equipment, supplies, and a permanent structure.
  - On November 8<sup>th</sup>, EQB and FEMA requested EPA assistance in restoring EQB Main laboratory in Bayamon to full capability for microbiological and chemical analysis. This will support EPA and EQB water assessment activities and hazardous waste MAs with an estimated cost of \$4M.
  - EPA met with the Puerto Rico Science Trust, which owns the land and structure occupied by the PREQB laboratory. The Trust provided EPA with the blueprints of the laboratory, and ERRS began sourcing for power generating equipment. ERRS is reviewing quotes for equipment to get the laboratory functioning appropriately. EPA and PREQB Central Office management planned to meet on November 19<sup>th</sup>.

## **Regulated Facilities in PR and USVI**

The Regulated Facility Assessment Coordinator (RFAC) continues to coordinate damage assessment and field assessment referral information with other Region 2 inspection programs working in underground storage tanks, Federal Facilities, the Resource Conservation and Recovery Act, the Clean Air Act, and the National Pollutant Discharge Elimination System.

Facility Type	Total Field Assessments Completed (as of November 21 <sup>st</sup> )	Total # of Facilities to be Assessed
<b>Puerto Rico</b>		
RMP	81	56
FRP	29	23
SPCC (non-FRP)	143	0
<b>USVI</b>		
RMP	1	1
FRP	7	6
SPCC (non-FRP)	79	0

## **Total Region 2 Drinking Water/Wastewater (DW/WW) Assessments**

<b>Drinking Water and Wastewater Assessments (as of November 21<sup>st</sup>)</b>
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Assessment Types	Total Assessments on PR	Total Assessments on USVI
On-Site DW Assessments	284	1282
On-Site WW Assessments	233	33

### Drinking Water/Wastewater (DW/WW) Assessments in PR

EPA staff are participating in ongoing PRASA water treatment plants (WTPs) and wastewater treatment plant (WWTPs) assessments:

- 22 of the 115 WTPs operated by PRASA are out of service.
- 103 WTPs are working on alternate power or primary power.
- 9.4% of the population is without drinking water services due to the lack of primary power, lack of diesel, operational problems, or clogged intakes.
- Non-PRASA drinking water facilities serve approximately 4% of the PR populations (PRASA systems service the other 96%). EPA worked with PR Department of Health, the Department of Defense (DOD), Health and Human Services (HHS), and FEMA to assess the 237 non-PRASA drinking water systems throughout PR.
  - 168 of the 237 non-PRASA systems are operational
  - An estimated 5-10 systems will need federal assistance to return to an operating condition
- 2 of the 51 WWTPs operated by PRASA are out of service.
- 18 WWTPs are working on primary power
- Out of PRASA's 51 facilities, 2 WWTPs are non-operational and upstream of a drinking water intake.
  - Utuado (2.0 MGD) - Main trunk sewer collapsed, no sewage reaching the plant. A contractor is on site.
  - Ciales (1.5 MGD) – Main trunk sewer collapsed, no sewage reaching the plant. A contractor is on-site.
- PRASA operates nearly 800 sanitary pump stations. As of November 15<sup>th</sup>, at least 136 sanitary pump stations are overflowing sewage due to lack of power, malfunctioning power generators, or pumping problems. 45 of these are located upstream of a water supply intake.

### Drinking Water/Wastewater Assessments in USVI

- The Department of Planning and Natural Resources (DPNR) established a 3-month alternative DW monitoring procedure. EPA continues to coordinate drinking water sampling with DPNR, who notifies the proprietors of affected systems to ensure proper disinfection measures are taken. Additionally, a boil water advisory will remain in place across the USVI.
- On STX, DPNR identified a total of 181 drinking water systems for assessment. EPA has assessed 152 of these systems, noting that 123 are operational.
- On STT and Saint John (STJ), EPA assessed 176 (100%) of all DPNR facilities, with 74% of those facilities being operational.
- 3 of the 8 WWTPs are out of service.
- USVI owns and operates 30 lift stations, with 6 being out of service.

### PR and USVI Debris Recovery

- Based upon endangered species and critical habitat data in the vicinity of EPA's HHW staging areas in PR, EPA submitted an initial "no effects" determination to The United States Fish and Wildlife Services (USFWS) under Section 7 of the Endangered Species Act on November 14<sup>th</sup> for 19 locations. USFWS concurred with EPA's determination. Supplemental submittals will be prepared as additional sites are identified.
- While U.S. Army Corps of Engineers (USACE) completes the permit process for several locations for debris collection staging areas in PR, EPA is coordinating with PREQB, the Puerto Rico Industrial Development Company (PRIDCO), and individual municipalities to establish temporary hazardous materials collection areas. EPA, along with USACE and PREQB, is visiting the proposed staging areas, as well as established municipal collection areas.
- There are 11 approved staging/disposal areas for HHW in PR and 7 approved staging areas for HHW in USVI.
  - EPA worked with the local community and USACE to move a debris pile in Toa Baja following local concerns about flies and insects bothers customers at an adjacent CVS pharmacy.

- In PR, USACE is developing plans for vegetative debris thermal reduction, including specifics on number of burners, number and location of sites, type of burners (full air curtain unit vs. trenches with blowers), method of deployment (fixed sites vs. moving burners from site-to-site). EPA brought PR EQB into discussions.
  - PR EQB waivers are needed to allow burning, but they have not yet been issued. Waivers lasting greater than 90-days need EPA approval.
  - The following four sites are identified as potential burn locations: Arecibo, Mayaguez former Tuna Facility, El Tuque Quarry (pilot site), and Camp Santiago.
- Discussions continue between FEMA, USACE, and the USVI government about vegetative debris burning; a final decision to proceed is pending. USACE reports that the vegetative debris burn operations on STX are likely to start on November 20<sup>th</sup> and STT on November 27<sup>th</sup>. PR EQP is considering a pilot program for the use of an air burner for vegetative debris disposal.
- In USVI, EPA deployed three air monitors to areas adjacent to the debris staging areas. The Emergency Response Team (ERT) plans to deploy personnel to prepare monitoring equipment prior to the burning of vegetative debris. The Department of Homeland Security developed the Interagency Modeling and Atmospheric Assessment Center (IMAAC) model for particulate air modeling during the vegetative debris burning operation.

#### Orphan Container, Pollution Response, and Vessels in PR and USVI

- As of November 21<sup>st</sup>, EPA Region 2 has removed a total of 7,636 containers in PR and 4,909 in USVI.

Vessel Assessments (as of November 21 <sup>st</sup> )		
Location	Vessels Assessed	Vessels Closed
Puerto Rico	344	124
U.S. Virgin Islands	448	74

#### Region 4 Significant Activities

##### Orphan Container, Pollution Response, and Vessels in Florida

- To date, EPA has collected 722 orphan containers, including drums, oil containers, and propane tanks. These items are being stored for waste stream categorization at the container staging area at the Florida Keys Marathon International Airport (MTH) and await repackaging prior to recycling or disposal at an offsite location.

Total Containers Collected (as of November 14 <sup>th</sup> )	
Container Type	Total Collected
Tanks > 100 gallons	49
55-gallon drums	208
Propane tanks	231
Refrigerant tanks	22
Oil and gas containers	103
Haz-labeled containers	23
Paint and coatings containers	17
Uncategorized containers	69
<b>Total</b>	<b>722</b>

Combined EPA and USCG Vessel Operations Tracking (as of November 14 <sup>th</sup> ) <sup>1</sup>			
USCG Sector	Vessels Identified <sup>2</sup>	Vessels Completed <sup>3</sup>	Vessels Remaining
Jacksonville	197	102	95
Key West <sup>4</sup>	1774	1361	413
Miami	293	151	142
St. Petersburg	302	270	32
<b>Total</b>	<b>2566</b>	<b>1884</b>	<b>682</b>

1. As reported by USCG Sector Key West

2. Table lists confirmed targets. Unified Command has identified over 3,000 potential targets for assessment

3. Removed by UC or 3<sup>rd</sup> party, transferred to FWC, or determined no further action necessary

4. Includes EPA and USCG vessel operations

### **EPA Headquarters Significant Activities**

- On November 14<sup>th</sup>, Regional Administrators for Regions 2, 4, and 6, and the OLEM Acting Assistant Administrator took part in a hearing before the House Committee on Energy and Commerce, Subcommittee on Environment. EPA witnesses shared information on the Agency's disaster efforts. The hearing webcast is available at <http://energycommerce.house.gov/>.
- On November 14<sup>th</sup>, EPA representatives participated in a member-level briefing with the House Appropriations Committee, Subcommittee on the Interior, Environment, and Related Agencies.
- Recently approved fact sheets on HHW management can be found at:
  - STX: <https://response.epa.gov/sites/12403/files/St%20Croix%20HHW%20Collection%20FLYER%2011%2014%2017.pdf>
  - STJ: <https://response.epa.gov/sites/12403/files/St%20John%20HHW%20Collection%20Flyer%2011-11-17.pdf>
  - STT: <https://response.epa.gov/sites/12403/files/St%20Thomas%20HHW%20Collection%20Flyer%2011-11-17.pdf>
- EPA finalized the story map on the Hurricane Maria Response: <https://epa.maps.arcgis.com/apps/MapJournal/index.html?appid=051533ab716c4f5e821dc361cbb1876f>.
- The Headquarters Emergency Operation Center (HQ EOC) is activated to Level 1 in support of EPA Regions 2 and 4 responses to Hurricanes Irma and Maria. For the Hurricanes Irma and Maria responses, the HQ EOC is coordinating on several levels with EPA Regions 2 and 4, and other federal agencies.
  - The HQ EOC is physically staffed with 4 EPA personnel and 1 contractor.
- EPA Senior Management on the Policy Coordination Committee (PCC) are holding weekly calls to discuss issues, highlights, and adherence to the management objectives.

### **Other EPA Activities**

- EPA and PRASA participated in the initial Government Accountability Office (GAO) meeting on November 15<sup>th</sup> regarding drinking and wastewater aspects of the response. The majority of the questions were directed to and answered by PRASA.
- EPA asked FEMA to wait until burn planning is complete prior to issuing news releases regarding vegetative debris burn operations.
- EPA is evaluating a variety of force majeure claims from a number of entities in PR and USVI on a case-by-case basis and preparing responses as appropriate.
- Region 2, Region 4, and HQ activities related to Irma and Maria response efforts are available at: [www.epa.gov/hurricane-irma](http://www.epa.gov/hurricane-irma) and [www.epa.gov/hurricane-maria](http://www.epa.gov/hurricane-maria), respectively.
- On September 26<sup>th</sup>, EPA approved emergency fuel waiver for mobile, non-road generators and pumps used for emergency purposes. The waiver allows sale, distribution and use of heating oil and marine fuel designated for use in Emission Control Areas (ECA marine fuel) that exceed the 15 parts per million (ppm) sulfur standard if the fuel meets certain conditions. As of November 14<sup>th</sup>, fuel suppliers are able to satisfy the demand for ultra-low sulfur

diesel fuel, so EPA is not planning to renew the waiver.

- On October 6<sup>th</sup>, EPA HQ issued NAA to PREPA to provide relief from certain Clean Air Act requirements, including emission limits, hours of operation limits, fuel usage restrictions, and restrictions on the shutdown or bypass of pollution control equipment for most of their electric generating units operating in PR. EPA reissued the NAA on November 17<sup>th</sup>; the new expiration date is January 1<sup>st</sup>.